

In re application of : Annapragada et al.
Application No. : 10/830,190
Filing Date : April 21, 2004
Examiner : Perreira, Melissa Jean
Title : Compositions and methods for enhancing contrast in
imaging

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AMENDMENTS TO THE CLAIMS

1. (Currently amended) A composition for enhancing contrast of one or more areas of a subject for X-ray imaging when administered to the subject, the composition comprising:

liposomes, ~~each liposome~~ the liposomes encapsulating one or more iodinated nonradioactive contrast-enhancing agents, and ~~each liposome~~ the liposomes comprising: cholesterol, at least one phospholipid, and at least one phospholipid which is derivatized with a polymer chain,

wherein the average diameter of the liposomes is less than 150 nanometers.
2. (Previously amended) The composition of claim 1, wherein the X-ray imaging is computed tomography.
3. (Currently amended) The composition of claim 1, wherein the iodinated nonradioactive contrast-enhancing agents are selected from at least one of: iodinated ionic compounds, iodinated nonionic compounds, and mixtures ~~thereof~~ thereof.
4. (Previously amended) The composition of claim 3, wherein a suspension of the liposomes has a concentration of at least 30 milligrams of iodine per milliliter of the suspension.
5. (Canceled).
6. (Previously amended) The composition of claim 1, wherein the average diameter of the liposomes is less than 120 nanometers.

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7. (Previously amended) The composition of claim 1, wherein the composition is capable of being administered to the bloodstream of the subject.
8. (Previously amended) The composition of claim 7, wherein the composition provides an enhanced contrast that remains detectable at least 30 minutes after administration.
9. (Previously amended) The composition of claim 7, wherein the composition provides an enhanced contrast of at least 50 Hounsfield units in at least part of at least one of a vasculature and an organ of the subject.
10. (Previously amended) The composition of claim 1, wherein the liposomes are PEGylated liposomes.
11. (Previously amended) The composition of claim 1, wherein the liposomes are targeted liposomes.
- 12.-24. (Canceled).
25. (Currently amended) A composition for enhancing contrast of one or more areas of a subject for X-ray imaging when administered to the subject, the composition comprising liposomes, ~~each liposome~~ the liposomes comprising:
at least one first lipid or phospholipid;
at least one second lipid or phospholipid which is derivatized with one or more polymers;
and

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at least one sterically bulky excipient capable of stabilizing the liposomes;

wherein the average diameter of the liposomes is less than 150 nanometers, and wherein ~~each liposome encapsulates~~ the liposomes encapsulate at least one iodinated nonradioactive contrast enhancing agent.

26. (Previously amended) The composition of claim 25, wherein the at least one first lipid or phospholipid comprises 1,2-dipalmitoyl-sn-glycero-3-phosphocholine (DPPC).
27. (Currently amended) The composition of claim 25, wherein the at least one second lipid or phospholipid which is derivatized with one or more polymers comprises ~~[N-(carboxymethoxypolyethyleneglycol 2000)-1,2-distearoyl-sn-glycero-3-phosphatidylcholine]~~ N-carbamylmethoxypoly(ethylene glycol)-1,2-distearoyl-sn-glycerol-3-phosphoethanolamine (DSPE-MPEG2000).
28. (Previously amended) The composition of claim 25, wherein the at least one sterically bulky excipient is selected from at least one of: sterols, fatty alcohols, fatty acids, and mixtures thereof.
29. (Previously amended) The composition of claim 25, wherein the at least one sterically bulky excipient is cholesterol.
30. (Previously amended) The composition of claim 25, wherein the liposomes are not autoclaved.

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31. (Currently amended) The composition of claim 25, wherein the liposomes are contained in a suspension medium, at least some of the iodinated nonradioactive contrast enhancing agent that has not been encapsulated by the liposomes having been removed from the suspension medium.
32. (Previously presented) The composition of claim 25, wherein the at least one first lipid or phospholipid is present in the amount of about 55 to about 75 mol %; the at least one second lipid or phospholipid which is derivatized with one or more polymers is present in the amount of about 1 to about 20 mol %; and the at least one sterically bulky excipient is present in the amount of about 25 to about 40 mol %.
33. (Currently amended) The composition of claim 32, wherein the at least one first lipid or phospholipid is hydrogenated soy phosphatidylcholine; the at least one second lipid or phospholipid which is derivatized with one or more polymers is ~~[N-(carbonylmethoxypolyethyleneglycol 2000)-1,2-distearoyl-sn-glycero-3-phosphatidylcholine]~~ N-carbamylmethoxypoly(ethylene glycol)-1,2-distearoyl-sn-glycerol-3-phosphoethanolamine (DSPE-MPEG2000); and the at least one sterically bulky excipient is cholesterol.